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## Technology in Social Work Education: Are We Practising What We Preach?

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### Abstract

Research on the use of technology in social work education is underdeveloped and neither well designed nor comprehensive. Assertions about its effectiveness are premature. More critical analyses and rigorous research needs to be conducted on the use of technology in social work education to determine what kind of technology works best with what kind of student and what kind of course. This article presents and evaluates the existing research on the use of technology in social work education. An appendix at the end of the article summarizes the studies in this review, illustrating the type of technology, research design, study limitations, courses offered and conclusions of the researchers.

### Introduction

Technological innovation has played an increasingly prominent role in shaping education in recent years as universities invest in the e-education infrastructure (Vernon, 2001). By 2001, 70 percent of all colleges and universities across the United States offered courses on-line (Russo, 2001). The extent of the use of technology in social work education is less clear but several indicators point to the fact that the profession has not escaped its influence. Promoters of technology within higher education argue that technology is innovative and part of the natural evolution of education. They also claim that technology in education is inevitable. On the other side are those who urge a more cautious approach through an examination of the impact of technology upon social work education before investing enormous amounts of time and money on technology and revising curricula. Placing the matter into a political context, Gustein (1999) warns that the invasion of technology into higher education represents the colonization of education by the corporate sector.

At times, words of caution are dismissed as 'technophobia' or 'anti-technology' (even when the critique suggests that there is a place for technology, but that place does not involve the uncritical use of

technology at any opportunity). The best way to resolve the debate about the use of technology in social work education is to critically examine available social work research examining the use of technology in social work education.

At the same time, students are regularly admonished to integrate critical thinking and research into their practice. The practice of social work educators entails the delivery of social work education to the next generation of professionals, which likewise, requires the use of critical thinking and integration of research and practice. Not only must social work educators develop expertise in a substantive practice area, if they are to practise what they preach, they must also integrate critical thinking and research into their own teaching practices. Doing so would eliminate the potential double standard of what is expected of social work students.

Nevertheless, while the use of technology within universities has become widespread over the past decade, few social work educators seem to have examined technology critically or researched the use and impact of technology as an adragogical tool. Universities are where this research and critique should occur. Research on the use of technology in social work education is imperative given the profession's special public trust in the education of high quality and competent social workers. Despite the fact that technology is affecting the values and culture of social work education, "over the past several years, practitioners and educators have been pressured to join the hyper technology assemblage by accepting at face value various types of electronic equipment" (Kreuger & Stretch, 2000, p. 107).

This article offers a preliminary examination of the research on the use of technology in social work education. We analyse the research on technology in social work education. We also discuss some key research and educational issues that emerge out of this research, and identify the potential and pitfalls to consider when implementing technology.

## Methods

A research assistant gathered studies specific to social work education and technology from referenced journals. Two of the papers included were presented at conferences. A total of 42 research studies were collected and analysed. The studies under review were published between 1984 and 2002. A grid of the studies was constructed containing the following items: author; date; type of technology implemented; role of technology; research design; outcome measures employed; limitations of the research design; sample characteristics; and, conclusions. While it is possible that some research papers were overlooked in the search, many authors in their studies lamented the lack of research in the area.

### Types of technology studied

The types of technology and the roles it plays, based on these articles, were quite diverse given the two-decade time frame under investigation as well as the various possible face-to-face and technological configurations. Not surprisingly, the types of technology utilized in these studies have become increasingly sophisticated over the past 18 years since the first paper on technology published in social work education in 1984. Types of technologies examined in the social work research include: interactive closed-circuit TV; interactive video disks; email; videotapes; one- and two-way television broadcasts; listserv; online courses; Interactive Video TV; the Internet; interactive web forums that includes discussions and chats; and finally, computer mediated communication.

As shown in Appendix 1, in MSW programs, 10 studies examined the use of ITV, two studied online courses, and the remainder reported on a range of technologies such as Interactive Video Disks, Email, an Internet assignment, and Listservs. BSW technologies included the use of videotapes, Listserv, videos and one-way broadcasts, and various Interactive Media. Moreover, some technology was not always provided in stand-alone courses. That is, the technology was sometimes employed to augment an existing face-to-face course. For example, in a couple of studies email was used as a supplement to a course, one was offered as a computer-assisted instructional program, and in a few, the use of the Web was required for course assignments in a traditional course. Other courses involved teaching technological skills to students or faculty in a laboratory setting. In addition, some courses offered technology to classes off-site but faculty also went to the alternative sites on occasion so that students were not offered courses in an exclusive technological format throughout an entire course. Finally, some remote sites employed on-site facilitators or course coordinators, while others did not. In eight studies, off-site courses (without face-to-face contact) were compared with traditional classes, although site coordinators were stationed at or visited the remote site in a few of the studies. (The extent of the use of off-site facilitators was not clear. In addition, the instructor sometimes moved between sites.)

### Types of courses

Of the 42 studies examined, 23 looked at MSW level courses, 8 BSW courses, and 3 to either a combined PhD/MSW level or BSW/MSW level courses. One course was offered to diploma students in the UK and the

remainder of studies examined program usage of technology or the training of faculty.

Appendix 1 identifies courses associated with the various technologies. MSW courses included foundation courses; practice courses; policy courses; theory courses; computer assisted instruction program; interviewing; organizational theory; drug and alcohol/substance abuse counseling; research methods; Child and Adolescent Assessment and Psychopathology; Human Behaviour and the Social Environment (HBSE); cultural diversity; field seminar; field supervision; and, family practice. The BSW courses in which technology was used included: practice courses, child welfare, and, substance abuse. In four courses the educational levels were not specified but included: Crisis Counseling; Introduction to Social Work; Building Family Foundations; and, Child Welfare. Other studies reported on training faculty on the use of technology as well as surveys of the use of technology in social work programs. Little comparison was made of the effectiveness of different types of courses at different educational levels. Based on these findings, we conclude that at the present point in time, much more investigation needs to be done to determine which courses are best suited for technological delivery and which courses are best offered within a traditional classroom format.

### Research designs

Most research designs were post-test only (N=31). Eight included a pre-test post-test design and three studies were surveys. In one study, measures were taken pre- mid- and post-test and another study failed to specify the research design employed. Few studies described the characteristics of the samples, except to discern whether it was a technology-mediated class or face-to-face. What was markedly absent from most of these studies, especially when comparison groups were used, was an adequate description of learner characteristics, such as experience, age, reasons for taking the particular course format and what alternative modes of delivery were available to the learners. Arguably, if the only way students could receive course credit were through a course provided via technology, the course (even if flawed), would be preferable to receiving no course at all and the outcomes would be affected.

Of the 42 studies reviewed, over half (N=26) used a comparison group, where distance delivery was compared with traditionally-delivered courses. In these cases, demographic and potentially confounding variables were absent from the analyses, making the impact of variables on the outcomes indiscernible. In addition, one study appeared to be identical to another study published later. Groups that were compared

included students in different sections or courses, different delivery formats, different years of course delivery and/or students within the same course.

#### Outcome measures

A wide range of outcome measures was utilized in these studies. Outcome measures included attitudes towards technology and technology use; discontinuance of enrollment; student satisfaction with the course; questionnaires to measure achievement motivation; accessibility of computers outside schools; course grades in exams and papers; the number of email messages sent in a particular course; self-reports on level of anxiety; semi-structured interviews (face-to-face and telephone); standardized and un-standardized instruments measuring attitudes towards subject matter or towards technology; course evaluations; instruments measuring interaction with instructor; quality of resources; identification with university; classroom socialization; instructional efficacy; gains in knowledge in substantive areas; frequency of usage of Website; classroom environment scale; ratings of course impact on learning; critical thinking skills test; learning environment; comfort with computers; personal proficiency with technology; and finally, social work values.

Given the wide range of outcome measures used, it is impossible to compare findings or draw conclusions across studies or make generalizations to other courses or programs. Indeed, Thyer et al (1998) strongly recommended that, “analogous studies examining student *learning*, not simply attitudes toward instruction, are urgently needed in social work education” (p. 294). However, few if any of the measures were substantive enough to actually determine whether technology produced equivalent learning outcomes and many outcomes examined how technology functioned rather than its intended impact upon learning. Moreover, the diversity of measures used in the various studies beg the question of what outcomes best capture the learning objective of a particular social work education program and the students. Mastery of content and skills in a substantive area and the transfer of that learning to practice situations are probably the most compelling outcomes of any social work educational experience; yet these variables were rarely examined in the targeted studies.

While attitude towards a particular learning experience such as technology may serve as an important intervening variable in learning, many studies stop short at measuring the attainment of the educational objectives by students within a particular course. In addition, the use of grades as an outcome measure is problematic, given research on grade

inflation, a phenomenon to which social work programs are not immune and instead, may be particularly vulnerable (see for example, Sieppert & Coleman, 2003). Inflated grades lack variance such that the detection of statistical significance is unlikely. When grades were used as a measure of effectiveness, the complete range of statistics such as mean and standard deviation were often absent. Similar concerns appear when using course evaluations, which some argue may lack construct validity (Coleman, Collins, & Sieppert, 2005). Some studies used *similar* examinations, *similar* content, and *similar* assignments, but *different* instructors.

### Limitations

Many designs were descriptive, while others were “show and tell” studies. Most studies also suffered from small sample sizes, with an emphasis upon anecdotal evidence. All employed convenience sampling and random assignment to the various classroom conditions was employed only once. Perhaps more importantly, when groups were compared, little to no detail was provided about the demographics of the samples. Conceivably, the groups differed demographically, and these differences might contribute to outcome bias. When groups were found to be different, in only one study was an attempt made to control for the differences. In particular, reasons for taking distance courses were not factored into the results, an important factor because several studies that concluded that distance education via technology was desirable also suggested that students would rather have a course delivered technologically (despite the problems) rather than have no course at all. Overall, control of extraneous variables and confounding variables was uniformly weak.

Outcome measures differed widely, leading to the question of what is the most appropriate measure for a technologically mediated class. Some studies compared grades between on-site and remote sites. As well, small sample sizes created statistical power issues. When some studies reported statistically significant differences in grades, basic descriptive statistics such as means and standard deviations were usually not provided. Other studies were compromised because students would be inclined to produce socially desirable responses, such as responses obtained through focus groups, face-to-face interviews or telephone contact with their instructors. Yet other studies reported on attitudes towards technology, which is a very limited account of outcome.

Instrumentation was also a problem. Several studies employed researcher-designed instruments, but the psychometric properties of the instruments were unknown, lending concerns about validity and

reliability. Other instruments used course evaluations, which again are confounded by factors other than satisfaction with a course or the amount of learning attained (Coleman, Collins & Sieppert, 2005). In addition, when course evaluations were used, they were not compared with evaluations in other courses. Other reports were anecdotal and there was no indication that the data were systematically analysed. Moreover, other studies involved courses that were compared but offered as far apart as four years and there was no indication that instructors, course content, texts or assignments were equivalent. Are *similar* assignments and *similar* course content sufficient bases upon which to draw sound conclusions about the efficacy of one form of teaching over another? In addition, some studies suggested that students rated a particular course more favourably because it was the *only* way they could take that particular course and negative evaluations would threaten the existence of the distance course. This bias interferes with objective reports of course delivery effectiveness or outcomes. Finally, in several cases, the conclusions overstepped the data that were collected, suggesting researcher bias. For example, Forster and Rehner (1998) noted that the traditional students had slightly higher grades and remote students had difficulty sustaining attention, suggesting that technology compromised their learning. At the same time, faculty reported that their ability to engage casually and spontaneously was severely constrained. Nevertheless, the authors concluded that traditional face-to-face and technology based learning was the same. Examples also included studies that reported major glitches with the technology used in a class, yet concluded that the education was comparable and that the students were tolerant of the glitches in order to get an education. For example, one study reported, "ITV was an educational nuisance to be endured" (Forster & Rehner, 1998).

Based on the examination of the outcome measures of the various studies, we cannot claim much confidence that the studies, whether courses were delivered through technology or in a traditional face-to-face format, demonstrated the effectiveness of a particular course under investigation.

## Conclusions

The evaluation of the outcomes of social work education poses serious challenges to educators (Gambrill, 2003). Most of the evaluations of social work education are "formative evaluations of a summative process" in that they examine the outcomes on a course-by-course basis and these individual courses are embedded within the context of a social work degree. While Gambrill argues that we need to examine graduates to

determine the outcome of social work education, clearly we are a long way from doing so, as the studies examined in this article reveal. Measuring whether students can hear an instructor clearly or whether they like the medium through which their education is delivered is rudimentary compared with what needs to be looked at.

Given the range of technologies studied, combined with the various configurations of courses with which the technologies were used, it is not surprising that results were mixed and confusing. Often, attitudes and course satisfaction were more positive for on-campus students. While many courses were plagued by technological problems, off-site students tended to be more forgiving of the difficulties. Technological difficulties created “noise” that confounded student satisfaction and attitudes.

Additionally, technology introduced “unusual” class dynamics, which arose unexpectedly in courses, between traditional and off-site students and sometimes even within the same class. In a technology course, Van Soest, Aanon and Grant (2000) reported that some comments were offensive, particularly for anonymous postings. Moreover, Johnson and Huff (2000) reported divisions with the class with regard to the “haves” and the “have-nots.” Forster and Rehner (1981) reported on the polarization and antagonism between the main campus group and the remote site connected via ITV. Students *with a choice* typically favoured “face-to-face” instruction over technologically based courses and on-site students expressed concern about sacrifices to their education for the benefit of the distant learners. Even then, ITV students often expressed a preference for face-to-face instruction and technology was *never* the first choice. At least one study reported that the preferred mode of instruction for clinical courses was live instruction. Students also expressed concern about the nature of the interpersonal interaction in the courses and many expressed the desire for auditory and other sensory experiences in their courses. With WebCT, text-based instruction overloaded students with information. Students had difficulty reading massive amounts of text, and regular social cues imbedded in human communication became buried. Group dynamics also became problematic.

Other barriers to learning included difficulty accessing support services. The use of technology also demanded more from the instructors in terms of preparation and attempting to understand the various communicative and social cues mediated through technology. Ultimately, technologically delivered courses appeared best suited to more experienced distance students who had no other means of enrolling in a particular course.

Clearly not enough quality research has been generated on the use of technology in social work education to make claims about the effectiveness of the medium. In addition, it remains to be determined



*what type of technology is effective with what type of student in what type of course?*

Appendix 2 summarizes the studies used in this review, illustrating the type of technology, research design, study limitations, courses offered and conclusions of the researchers. Based on these findings presented in Appendix 2, we conclude that the various technologies have not been adequately studied at either the BSW or MSW level as they pertain to social work education.

Given the expense and impact of technology upon student learning, we are ethically compelled to address lingering questions about the effectiveness of technologies in social work education. Yet, to date, the literature on online education is largely promotional (MacFadden, Maiter, & Dumbrill, 2002) and the evaluation of distance education is not based on an established set of standards. Accordingly, research on teaching effectiveness into the use of technologies in social work education is sparse particularly in light of what appears to be an influx of technology in courses in social work education. When evaluating an online course, it is essential to start with a reasonably homogeneous student group, especially in terms of pre-knowledge (Benigno & Trenton, 2000). Otherwise, pre-existing knowledge needs to be controlled. No answers to the following questions are yet available: What is success in a distance program? How do we measure success? (Forster & Washington, 2000). While much of the research to date has consisted of “show-and-tell designs,” personal impressions do not provide an adequate basis for estimating participation quality both of individual students and of the entire learning group.

Benigno and Trenton (2000) suggest that the following elements need to be evaluated: participative, social, interactive, cognitive and metacognitive. When these elements exist, they have been either incomplete or flawed. In addition, Howorth (1999) suggests that, “yardsticks are inadequate for measuring the quality and standards of distance education programs ... on whether students have mastered course material” (p. 11).

Problems evident in existing studies include: focusing on student satisfaction or attitudes toward technology (Cauble & Thurston, 2000; Falaron, 1995; Hick, 1999a; Kelley, 1993; McFall & Freddolino, 2000; Miller-Cribbs & Chadiha, 1998; Morgan, 1996; Panos, Panos, Cox, Galbraith, & Matheson, 2002; Petracchi, 2000; Schoech, 2000; Seabury, 2002; Seabury & Maple, 1993; Stocks & Freddolino, 1998; Thyer, Artelt, Markward, & Dozier, 1998; Thyer, Polk, & Gaudin, 1997; Weinbach, Gandy, & Tartaglia, 1984; Wernet, Olliges, & Delicath, 2000) rather than learning outcomes; the use of nonequivalent comparison groups and subsequent lack of control of confounding variables (Coe & Elliott, 1999;

Faux & Black-Hughes, 2000; Finnegan & Ivanoff, 1991; Forster & Rehner, 1998; Freddolino & Sutherland, 2000; Hollister & McGee, 2000; Johnson & Huff, 2000; Huff, 2000; Kelley, 1993; Kleinpeter & Potts, 2002; Ligon, Markward & Yegidis, 1999; Panos, Panos, Cox, Galbraith & Matheson, 2002; Patchner, Petracchi & Wise, 1998; Petracchi, 1998; Petracchi & Morgenbesser; Petracchi & Patchner, 2000; Randolph & Krause, 2002; Seabury, 2002; Thyer, Polk & Gaudin, 1997); descriptive designs (e.g., Coe & Elliott, 2001; Hick, 2002; Latting, 1994; Morgan, 1996); measurement problems (e.g., Coe & Elliott, 1999; Forster & Rehner, 1998; Latting, 1994; Patchner, Petracchi & Wise, 1998; Petracchi & Morgenbesser, 1995); researcher bias (e.g., Ligon, Markward & Yegidis, 1999; Petracchi & Patchner, 2000; Schoech, 2000); and, overstepping the data through overgeneralization from anecdotal or descriptive evidence.

In light of the limitations of the studies that were examined in this review, claims about the desirability and/or effectiveness of these courses are not convincing. Students typically express frustration with the technological problems and interference of technology and associated problems with learning. Others note the shortcomings of both Web-based teaching and ITV due to their failure to provide instructors and other students with important social cues. The ability to understand and work with “social cues” is fundamental to communication and skills training in social work education. Exposure to methods where social cues are minimized or neglected altogether deprives students of valuable learning opportunities; moreover, class dynamics and interactions have not been examined, except vicariously and anecdotally. When group dynamics did appear as an outcome, the impression was that Web and ITV courses produced some unexpected and negative class dynamics. Student preferences usually favoured the traditional classroom with personal interaction and group cohesion to enable class discussions.

Based on this brief review, we conclude that the effectiveness and desirability of technology in social work education, at this time, is unproven, a point emphasized by Kreuger and Stretch over three years ago: “There is limited evidence ... that more or better outcomes are being achieved in social work education via hypermodern methods, especially among those heavily invested in computer-assisted work or instruction routines” (2001, p. 105). More research focusing in particular on what kinds of education are best delivered via virtual courses versus traditional classrooms is warranted (Burton & Seabury, 1999). Others who oppose technology in social work education are more emphatic: “ ... it is ethically incumbent upon social work academics to conduct the requisite students prior to ‘experimenting’ with MSW students’ professional education” (Thyer, et al, 1998, p. 294). Effectiveness is therefore not the only

concern. We cite Epstein (2000) who suggested that we must not validate a program through “charitability.” Instead, adequate standards are needed to measure educational quality, using reasonable and convincing evaluative designs to sustain the conclusions.

To date, the evaluation literature does not specifically address what types of courses may or may not be appropriate for a distance education format (Coe & Elliott, 1999). Social work educators are only at the beginning of investigating the efficacy and desirability of studying courses delivered by the various technological media. Most studies presented in this chapter had serious limitations to their designs and fail to answer anything but basic questions about the use of technology in social work education.

The research studies examined here provide a preliminary foundation upon which to launch future studies. Given insufficient evidence about the use of technology specific to *social work education*, it is disconcerting that millions of public dollars are being spent on technological innovation and curricula are being revised without compelling evidence on its effectiveness. Yet, we cannot be too critical of these studies. They offer educators some preliminary information about the use of technology in social work education and appreciate that the studies have been offered in the public forum. The numbers of available studies are limited and it is apparent that they comprise only a small percentage of all distance courses delivered in social work education. We now need to move into more full-scale evaluations to not only examine the outcomes of social work in general but also the outcomes of social work education delivered by technology.

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**Appendix 1:** Program Level, Type of Technology used, and Course

<b>Degree</b>	<b>Type of Technology</b>	<b>Course</b>
MSW	Interactive Closed Circuit	Foundation course
	Interactive Video Disks	Introduction to Social Work Practice Methods
	Computers for Word Processing	
	ITV	5 courses
	Interactive Video Disks	Introduction to Interpersonal Practice
	Email	Organizational Theory
	ITV	Child Welfare
	ITV	Not specified
	Internet Assignment	Human Diversity
	ITV	Research
	Televised Instruction	Child and Adolescent Assessment and Psychopathology
	Two way audio	HBSE, Cultural Diversity, Policy, and Substance Abuse
	Satellite TV	Child Welfare
	Interactive Web	HBSE
	ITV	Field
	ITV	Entire program
	ITV	Substance Abuse, Child Welfare
	ITV, Email, Listserv	Social Policy
	ITV	Research Methods
	ITV/Pre-recorded video tapes	Research
	Computer Mediated delivery	An entire program
	Web course	Research
	ITV	Practice Methods
	Web	Organizational Theory
	Computer Tutorial	Crisis course
	Video Conferencing	Field Supervision
	Online course	Introduction to Social Work
	Online course	Cultural Competency



<b>BSW</b>	<b>Technology</b>	<b>Course</b>
	Video/one-way broadcast	Drug and Alcohol Abuse
	Listserv	Practice Methods
	Videotapes	Not specified
	Internet Website	Introduction to Social Work
	Interactive Media	Family Course
	Interactive Web	HBSE
	ITV	Social Welfare Policy, Research Methods, Social Welfare in Modern Society, Methods, Senior Seminar, Social Work Administration, HBSE, Research Methods
<b>Combined BSW/MSW</b>	<b>Technology</b>	<b>Course</b>
	WebCT	Research
<b>PhD</b>	<b>Technology</b>	<b>Course</b>
	Web/Listserv	Technology